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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,940	12/23/2003	Richard C. Caponi	SPIROL/111/US	9382

2543 7590 07/27/2005

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EXAMINER	
FERGUSON, MICHAEL P	
ART UNIT	**PAPER NUMBER**
3679	

DATE MAILED: 07/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/743,940	CAPONI, RICHARD C.	
	Examiner	Art Unit	
	Michael P. Ferguson	3679	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *27 April 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 04/24/04, 06/02/05
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

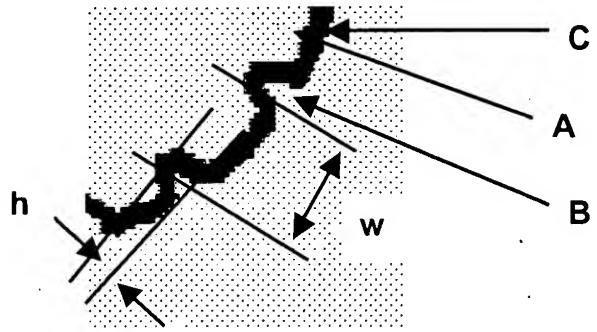
2. Claims 1-13 and 15-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Johnson (US 2,223,871).

As to claim 1, Johnson discloses a pin for insertion in a hole in a host material, comprising:

an elongated cylindrical body constructed from a substantially homogeneous material, the body having a longitudinal axis and a formed portion providing a retaining surface that engages an inside surface of the hole;

the retaining surface defined by a plurality of helical lands **A** (Figure 9 reprinted below with annotations) having a width separated by a plurality of helical grooves **B** of approximately equal width, the lands being partially formed from pin material displaced from the grooves,

wherein a portion of each land includes a cylindrical surface **C** parallel to the longitudinal axis at a substantially uniform radial distance from the longitudinal axis (Figures 8 and 9).



As to claim 2, Johnson discloses a pin wherein the lands **A** are oriented at an angle of approximately (near the value of) 45° relative to the longitudinal axis (Figure 9).

As to claim 3, Johnson discloses a pin wherein the pin is formed from cylindrical stock having a first diameter and the retaining surface has a second diameter larger than the first diameter (Figure 9).

As to claim 4, Johnson discloses a pin wherein the second diameter is no greater than approximately 9% larger than the first diameter (based on the scale of Figure 9; Examiner notes that the drawings are good for what they show).

As to claim 5, Johnson discloses a pin wherein the helical grooves **B** and lands **A** are oriented at an angle of approximately (near the value of) 45° relative to an axis of the pin (Figure 8).

As to claim 6, Johnson discloses a pin wherein the lands **A** have a surface area **C** that is approximately 40% of a surface area of the formed portion (based on the scale of Figure 9; Examiner notes that the drawings are good for what they show).

As to claim 7, Johnson discloses a pin wherein a majority of each of the lands **A** has a substantially uniform height **h** extending above the first diameter and the width **w**

of the land is approximately five times the height (based on the scale of Figure 9; Examiner notes that the drawings are good for what they show).

As to claim 8, Johnson discloses a pin wherein a majority of each of the lands **A** has a substantially uniform height **h** extending above the first diameter and the width **w** of the land is between five and fifteen times the height (based on the scale of Figure 9; Examiner notes that the drawings are good for what they show).

As to claim 9, Johnson discloses a pin wherein a majority of each land **A** is a cylindrical surface **C** parallel to and having a substantially uniform radial displacement from the longitudinal axis (Figure 9).

As to claim 10, Johnson discloses a pin and substrate combination comprising:

a substrate having a first hardness and defining a hole having a first diameter; and

a pin for insertion into the hole, the pin having a second hardness less than the first hardness (the teeth **A** are deformed by insertion into the substrate; page 2 column 1 lines 19-26 and 38-43) and a retaining surface at a second diameter larger than the first diameter, the retaining surface defined by a plurality of lands **A** having a width separated by a plurality of grooves **B** of approximately equal width,

wherein a portion of each land includes a cylindrical surface **C** parallel to the longitudinal axis at a substantially uniform radial distance from the longitudinal axis (Figures 8 and 9).

As to claim 11, Johnson discloses a pin and substrate combination wherein the second diameter is no more than approximately 4% larger (inherently) than the first diameter.

As to claim 12, Johnson discloses a pin and substrate combination wherein the lands **A** and the grooves **B** are helical (Figure 8).

As to claim 13, Johnson discloses a pin and substrate combination wherein the lands **A** and the grooves **B** are helical and have an angle of approximately (near the value of) 45° relative to an axis of the pin (Figure 8).

As to claim 15, Johnson discloses a pin and substrate combination wherein the pin is formed from cylindrical stock having a third diameter and the second diameter is greater than the third diameter (Figure 9).

As to claim 16, Johnson discloses a pin and substrate combination wherein the second diameter is less than approximately 9% larger than the third diameter (based on the scale of Figure 9; Examiner notes that the drawings are good for what they show).

As to claim 17, Johnson discloses a pin and substrate combination wherein the retaining surface is carried on a formed portion of the pin and the lands have a surface area **C** which is approximately 40% of a surface area of the formed portion (based on the scale of Figure 9; Examiner notes that the drawings are good for what they show).

As to claim 18, Johnson discloses a pin and substrate combination wherein a majority of each of the lands **A** has a substantially uniform height **h** extending above the third diameter and the width **w** of the land is approximately five times the height (based

on the scale of Figure 9; Examiner notes that the drawings are good for what they show).

As to claim 19, Johnson discloses a pin and substrate combination wherein a majority of each of the lands **A** has a substantially uniform height **h** extending above the third diameter and the width **w** of the land is between five and fifteen times the height (based on the scale of Figure 9; Examiner notes that the drawings are good for what they show).

As to claim 20, Johnson discloses a pin and substrate combination wherein the lands **A** are partially formed from pin material displaced from the grooves **B** (Figure 9).

As to claim 21, Johnson discloses a pin for insertion in a hole in a host material and frictional retention therein, comprising:

an elongated cylindrical body having a longitudinal axis, a cylindrical pilot portion, and a retainer portion defined by a plurality of alternating helical lands **A** and grooves **B**, wherein the lands provide a retaining surface **C** for engaging an inside surface of the hole;

the retaining surface being a radial distance from the axis that is greater than a radius of the pilot portion and occupying approximately 40% of the circumference of the retainer portion when the retainer portion is viewed in cross section perpendicular to the axis (based on the scale of Figures 8 and 9; Examiner notes that the drawings are good for what they show).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson.

As to claim 14, Johnson fails to disclose a pin and substrate combination wherein the first hardness is approximately 10 points higher on the Rockwell Rc scale than the second hardness.

The applicant is reminded that the selection of a known material based upon its suitability for the intended use is a design consideration within the skill of the art. In re Leshin, 227 F.2d 197, 125 USPQ 416 (CCPA 1960). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify a pin and substrate combination as disclosed by Johnson wherein the first hardness is approximately 10 points higher on the Rockwell Rc scale than the second hardness as such practice is a design consideration within the skill of the art.

Response to Arguments

5. Applicant's arguments filed April 27, 2005 have been fully considered but they are not persuasive.

As to claims 1,9 and 10, Attorney argues that:

Johnson does not disclose a pin comprising an elongated *cylindrical* body

wherein a majority of each land includes a *cylindrical surface parallel to the longitudinal axis at a substantially uniform radial distance from the longitudinal axis*.

Examiner disagrees. As to claim 1, Johnson discloses a pin comprising an elongated cylindrical body wherein a majority of each land **A** includes a cylindrical surface **C** parallel to the longitudinal axis at a substantially uniform radial distance from the longitudinal axis (Figure 9).

As to claims 2, 5 and 13, Attorney argues that:

Johnson does not disclose a pin wherein the helical grooves and the lands are oriented at an angle of *approximately 45°* relative to an axis of the pin.

Examiner disagrees. As to claim 5, Johnson discloses a pin wherein the helical grooves **B** and lands **A** are oriented at an angle of approximately (near the value of) 45° relative to an axis of the pin (Figure 8).

As to claims 4 and 16, Attorney argues that:

Johnson does not disclose a pin wherein the second diameter is *no greater than approximately 9% larger than the first diameter*.

Examiner disagrees. As to claims 4 and 16, Johnson discloses a pin wherein the second diameter is no greater than approximately 9% larger than the first diameter (based on the scale of Figure 9; Examiner notes that the drawings are good for what they show).

As to claims 6 and 17, Attorney argues that:

Johnson does not disclose a pin wherein the lands have a surface area that is

approximately 40% of a surface area of the formed portion.

Examiner disagrees. As to claims 6 and 17, Johnson discloses a pin wherein the lands **A** have a surface area **C** that is approximately 40% of a surface area of the formed portion (based on the scale of Figure 9; Examiner notes that the drawings are good for what they show).

As to claims 7,8,18 and 19, Attorney argues that:

Johnson does not disclose a pin wherein a majority of each of the lands has a substantially uniform height extending above the first diameter *and the width of the land is between five and fifteen times the height.*

Examiner disagrees. As to claims 7,8,18 and 19, Johnson discloses a pin wherein a majority of each of the lands **A** has a substantially uniform height **h** extending above the first diameter and the width **w** of the land is between five and fifteen times the height (based on the scale of Figure 9; Examiner notes that the drawings are good for what they show).

As to claim 10, Attorney argues that:

Johnson does not disclose a combination comprising a substrate having a first hardness and a pin having *a second hardness less than the first hardness.*

Examiner disagrees. As to claim 10, Johnson discloses a combination comprising a substrate having a first hardness and a pin having a second hardness less than the first hardness (the teeth **A** are deformed by insertion into the substrate; page 2 column 1 lines 19-26 and 38-43).

As to claim 21, Attorney argues that:

Johnson does not disclose a pin comprising *an elongated cylindrical body* having a longitudinal axis, a cylindrical pilot portion, and a retainer portion defined by a plurality of alternating helical lands and grooves; the retaining surface being a radial distance from the axis that is greater than a radius of the pilot portion and occupying approximately 40% of the circumference of the retainer portion when the retainer portion is viewed in cross section perpendicular to the axis.

Examiner disagrees. As to claim 21, Johnson discloses a pin comprising an elongated cylindrical body having a longitudinal axis, a cylindrical pilot portion, and a retainer portion defined by a plurality of alternating helical lands **A** and grooves **B**; the retaining surface being a radial distance from the axis that is greater than a radius of the pilot portion and occupying approximately 40% of the circumference of the retainer portion when the retainer portion is viewed in cross section perpendicular to the axis (based on the scale of Figures 8 and 9; Examiner notes that the drawings are good for what they show).

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Ferguson whose telephone number is (571)272-7081. The examiner can normally be reached on M-F (8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on (571)272-7087. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MPF
07/13/05

Daniel P Stodola

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